

Appln. No. 10/816,423

Attorney Docket No. 10541-1930

## II. Amendments to the Abstract

Please amend the abstract as follows:

~~The present invention provides a~~ A fluxgate magnetometer including a fluxgate and a digital processor. The digital processor includes an analog to digital converter for digitizing the back EMF from the fluxgate and a signal generator to generate the fluxgate driving signal. Further, a current sourcing circuit is provided to receive the fluxgate driving signal from the signal generator and transmit a current amplified driver signal to the fluxgate capable of driving the fluxgate in and out of saturation. The signal generator is a pulse width modulator used in conjunction with a voltage shaper and driver to create a triangle-shaped driving signal to excite the fluxgate. The digital processor is further configured to reverse the sign of the digital back EMF signal at a frequency corresponding to two times the frequency of the fluxgate driving signal thereby capturing only the second harmonic of the back EMF signal. ~~The digital processor integrates the digital back EMF signal to generate a signal corresponding to the physical input of the fluxgate magnetometer.~~



BRINKS HOFER GILSON & LIONE  
PO Box 10395  
Chicago, IL 60610